National Marine Sanctuaries ™

ECOSYSTEM MONITORING

Action Plan Summary

MONTEREY BAY NATIONAL MARINE SANCTUARY

THE ISSUE:

To effectively protect an ecosystem, it is necessary to know the ecosystem components and to understand how these components change through time. Studying and noting how a component changes through time is called monitoring. Monitoring is a tool for understanding why the change occurs and in determining whether or not the change is attributable to human or natural causes. Monitoring is critical to resource managers who need to make informed decisions regarding ecosystem protection and to inform the public about their impacts on the environment.

Because the Monterey Bay National Marine Sanctuary(MBNMS), the Gulf of the Farallones National Marine Sanctuary(GFNMS), and Cordell Banks National Marine Sanctuary(CBNMS) sit adjacent to one another, they share some of the same habitats, organisms, and management concerns. The Ecosystem Monitoring Action Plan provides a framework for close coordination in ecosystem monitoring amongst the three sanctuaries, enabling the sanctuaries to more effectively address ecosystem monitoring issues.

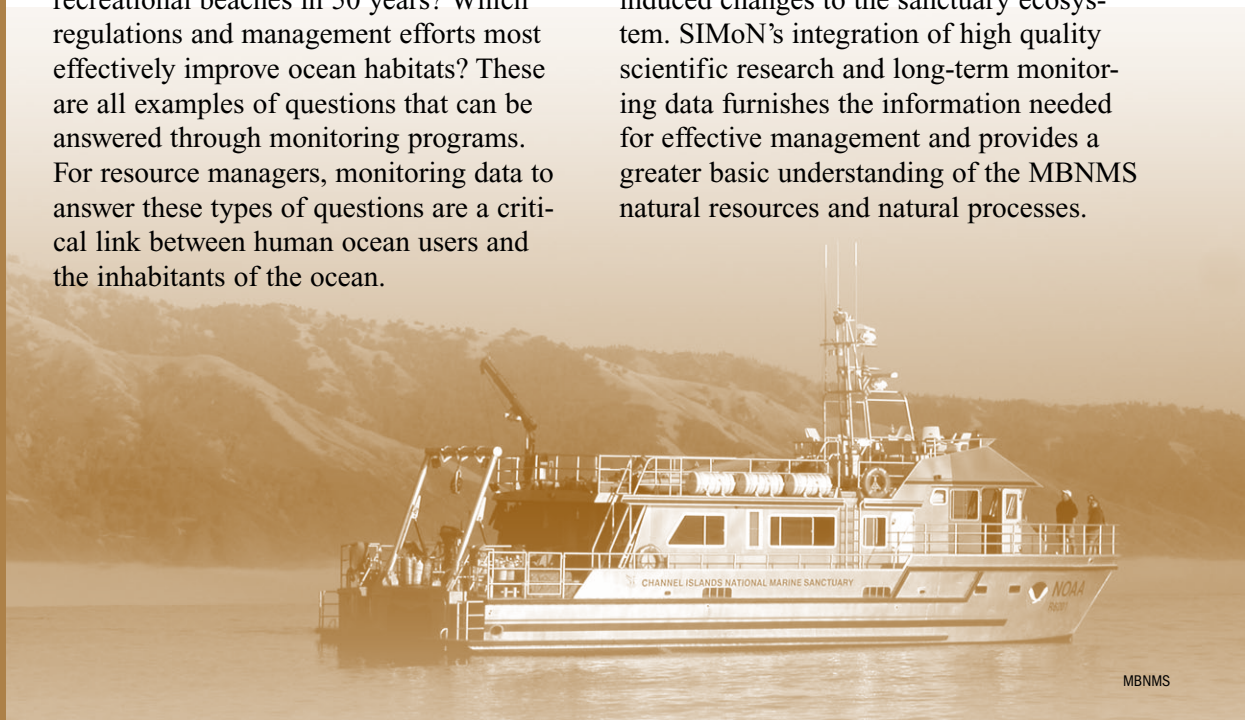
OUR GOAL

The sanctuary's goal is to provide an ecosystem monitoring program within the MBNMS to determine human induced and natural changes to natural resources, and to disseminate this information to the public and agency decision makers. Moreover, this effort is to be integrated with the GFNMS and CBNMS monitoring projects to efficiently address similar problems and to effectively study regional scale, cross-sanctuary phenomena.

BACKGROUND INFORMATION

Is the ocean water clean enough to swim in? Is the frequency of toxic shellfish natural, or increasing due to runoff from human activities? Are their fewer whales in the Monterey Bay National Marine Sanctuary (MBNMS) this year because of a temporary shift to another sanctuary, or because they are dying from some unknown cause? Will there be enough sand for recreational beaches in 50 years? Which regulations and management efforts most effectively improve ocean habitats? These are all examples of questions that can be answered through monitoring programs. For resource managers, monitoring data to answer these types of questions are a critical link between human ocean users and the inhabitants of the ocean.

The 1972 legislation establishing the National Marine Sanctuary System requires that long-term monitoring of sanctuary resources is supported, promoted, and coordinated. The MBNMS, in collaboration with the regional science and management community, designed the Sanctuary Integrated Monitoring Network (SIMoN) to identify and track natural and human induced changes to the sanctuary ecosystem. SIMoN's integration of high quality scientific research and long-term monitoring data furnishes the information needed for effective management and provides a greater basic understanding of the MBNMS natural resources and natural processes.



MBNMS

SIMoN utilizes existing data sets, supports and augments current research and monitoring efforts, and initiates new efforts to address important gaps in our knowledge of the MBNMS. The strength of this program is that SIMoN serves as the hub for regional ecosystem monitoring. Regional scientists continue to collect the large majority of monitoring data, but the MBNMS helps generate funds and other support required to maintain or expand some existing efforts and to initiate new studies.

Through SIMoN, the MBNMS also integrates and interprets results of individual efforts in a large ecosystem-wide context, and continuously updates and disseminates data summaries to facilitate communication among researchers, managers, educators, and the public. Timely and pertinent information is provided to all parties through tools such as the SIMoN web site, an annual symposium, and a series of technical and general reports.

Monterey Bay, Gulf of the Farallones, and Cordell Bank are unique in the sanctuary system because they share boundaries despite being designated as distinct management areas at different times. Due to this close proximity they also share many common resources, ecosystems, and management concerns. They are all part of the ocean system called the California Current. They have many identical habitat types and species, and species like whales have individuals that migrate from one sanctuary to the next. The established boundaries between the three are political constructs that do not necessarily coincide with distinct ecological zones that extend beyond individual sanctuary boundaries.

In the past, each sanctuary has mostly worked independently of the other two to develop monitoring programs and partnerships that address individual management concerns. The type and amount of monitoring information required by sanctuary management includes data from within the sanctuary and from areas outside the boundaries that influence sanctuary waters. Not surprisingly, the different sanctuaries have developed similar beach survey, rocky shore, and offshore bird and mammal monitoring programs. They have also participated in a national effort to develop an ocean observing system that will become similar, in many ways, to the current national weather forecasting programs. The cross cutting ecosystem monitoring action plan recognizes the advantages of closer coordination and collaboration of monitoring efforts in the Monterey Bay, Gulf of the Farallones, and Cordell Bank National Marine Sanctuaries.

The three central and northern California sanctuaries will work together to coordinate existing monitoring activities, identify opportunities for additional regional monitoring, and establish advisory panels and oversight mechanisms required to conduct and evaluate coordinated monitoring. One of these efforts will be to expand SIMoN across the three sites. This cross-sanctuaries action plan is the most effective and efficient means to provide information for resource conservation and management across and area that encompasses over one quarter of the entire California coastline.

Beach Combers monitoring beach-cast marine mammals and birds.

THE SANCTUARY'S ACTION PLAN

The "Sanctuary Integrated Monitoring Network Action Plan" and "Ecosystem Monitoring Action Plan" were developed jointly with a variety of stakeholders and partners and include, but are not limited to, the following components:

- Initiate new and continue existing monitoring efforts to address needs identified as priorities in the MBNMS Management Plan
- Coordinate and synthesize historic data sets with information from the various regional research institutions working within the MBNMS
- Expand the SIMoN database to include all ongoing regional monitoring projects
- Produce an periodic "SIMoN Says" report to address the health of the MBNMS
- Expand SIMoN as a model for the National Marine Sanctuary System
- Coordinate and standardize protocols for data collection across the Monterey Bay, Gulf of the Farallones and Cordell Bank National Marine Sanctuaries
- Build upon and integrate existing site monitoring programs into regional programs
- Participate in the development of regional ocean observatory programs
- Establishing a coordinated monitoring team across the three sanctuaries

For a complete listing of the sanctuary's "Ecosystem Monitoring Action Plan" please visit http://sanctuaries.nos.noaa.gov/jointplan/m_reptoad.html and scroll down the page.

Additional Information, Activities, and Ways to Get Involved

Participate in monitoring events through volunteer groups that conduct some of the long term monitoring projects within the sanctuary regions such as:

BeachCOMBERS (Beach Coastal Ocean Mammal/Bird Education and Research Surveys): This beach-monitoring program provides long-term baseline data on the species and number of dead animals along beaches. Volunteers walk sections of beaches, between Davenport and Cambria, to identify and count the number of dead beach-cast seabirds and marine mammals.

Beach Watch: Volunteers in this program monitor the number of live and dead birds as well as dead marine mammals and oil on beaches in Marin, San Francisco, and San Mateo Counties.

LiMPETS (Long-term Monitoring Program and Experiential Training for Students): This program involves students and volunteers in monitoring rocky intertidal and sandy beach environments.

Sanctuary Citizen Watershed Monitoring Network: This watershed monitoring program collects data on the quality of the water flowing into the MBNMS in wet and dry weather months. Through three individual programs, volunteers can get involved in water quality testing:

- ***Snapshot Day:*** This is a one-day monitoring event that evaluates the eleven major watersheds flowing into the MBNMS. Volunteers span the sanctuary's boundaries from San Simeon in the south to the San Mateo coast in the north, conducting simple water quality tests.
- ***Urban Watch:*** From June through October, this summer long monitoring program tests the waters that flow into the sanctuary from city streets through storm drains in Monterey, Pacific Grove, and Capitola.
- ***First Flush:*** This one-day event measures the waters flowing into the MBNMS during the first major storm of the winter season. Because the date of the first storm unpredictable, no definite date set for this event and volunteers must be flexible.

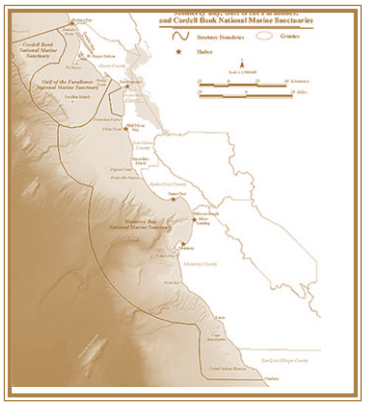
SEALS (Sanctuary Education Awareness and Long Term Stewardship): This program involves volunteers in monitoring and protection of harbor seal pups from human disturbance in Tomales Bay, Marin County.

"Least Wanted" Monitoring: Volunteers in this program monitor for invasions of non-native aquatic organisms in Elkhorn Slough and boat harbors, with a goal of early enough identification to allow for successful eradication.

The Joint Management Plan Review (JMPR)

"Ecosystem Monitoring" is one of the action plans in the Monterey Bay National Marine Sanctuary Draft Management Plan. The MBNMS Draft Management Plan includes twenty-eight plans that, once finalized, will guide sanctuary management for the next five years. The plan is a revision of the original management plan, adopted with sanctuary designation in 1992, and is focused on how to best understand and protect the sanctuary's resources.

The National Marine Sanctuary Program (NMSP) is updating the management plans for the Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries in a process known as the Joint Management Plan Review (JMPR).



How You Can Get Involved in the MBNMS Management Plan Process

The MBNMS welcomes your ideas about important resource management issues in the sanctuary. A Draft Management Plan and Draft Environmental Impact Statement are scheduled for release to the public in 2006. Following their release, hearings will be held in several locations throughout the region to gather public comment. Written comments will be accepted as well. To find out about public hearings, or how to submit written comments, please visit our website at http://www.sanctuaries.nos.noaa.gov/jointplan.

Watsonville High School students participating in the **LiMPETS** program.

Resources

Beach Coastal Ocean Mammal/Bird Education and Research Surveys http://montereybay.noaa.gov/research/bchmon.html
Least Wanted Species http://www.elkhornslough.org/research/biomonitor_invasion.htm
Long-term Monitoring Program and Experiential Training for Students http://limpets.noaa.gov
Monterey Bay National Marine Sanctuary http://montereybay.noaa.gov
Sanctuary Citizen Watershed Monitoring Network
http://montereybay.noaa.gov/monitoringnetwork/welcome.html
Sanctuary Education Awareness and Long Term Stewardship http://www.gfnms.nos.noaa.gov
Sanctuary Integrated Monitoring Network (SIMoN) http://www.mbnms-simon.org

THE MONTEREY BAY NATIONAL MARINE SANCTUARY

Stretching from Marin to Cambria, the Monterey Bay National Marine Sanctuary encompasses 276 miles of shoreline and 5,322 square miles (4,625 nautical miles) of ocean, extending an average distance of 30 miles from shore. At its deepest point, the sanctuary reaches down 10,663 feet (more than two miles). The sanctuary was established for the purposes of resource protection, research, education, and public use. Its natural resources include one of our nation's largest kelp forests and one of North America's largest underwater canyons. It is home to one of the most diverse marine ecosystems in the world, including 33 marine mammal species, 94 seabird species, 345 fish species, and numerous invertebrates and plants. This remarkably productive marine environment is fringed by spectacular coastal scenery, including sandy beaches, rocky cliffs, rolling hills, and steep mountains.

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